

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): A processing apparatus, comprising:

a transfer chamber;

a plurality of processing chambers for processing therein a substrate to be processed,
the processing chambers being coupled to the transfer chamber;

a number of electrostatic chucks which are provided in the processing chambers, to
electrostatically adsorb the substrate to be processed thereto;

a transfer mechanism installed in the transfer chamber to transfer the substrate to be
processed between the processing chambers and the transfer chamber; and

a monatomic nitrogen atom supply unit for supplying dissociated monatomic nitrogen
atoms into the processing chambers.

Claim 2 (Original): A processing apparatus, comprising:

a transfer chamber;

a first processing chamber coupled to the transfer chamber, the first processing
chamber performing therein a first process on a substrate to be processed;

a second processing chamber coupled to the transfer chamber, the second processing
chamber performing therein a second process on the substrate to be processed;

a transfer mechanism installed in the transfer chamber for sequentially transferring the
substrate to be processed into the first and second processing chamber;

electrostatic chucks provided in the first and the second processing chambers, the
electrostatic chucks electrostatically adsorbing thereto the substrate to be processed; and

a monatomic nitrogen atom supply unit for supplying dissociated monatomic nitrogen
atoms into the first and second processing chamber.

Claim 3 (Original): The processing apparatus of claim 1, wherein the monatomic nitrogen atom supply unit supplies the dissociated monatomic nitrogen atoms to a close proximity of the electrostatic chucks.

Claim 4 (Original): The processing apparatus of claim 2, wherein the monatomic nitrogen atom supply unit supplies the dissociated monatomic nitrogen atoms to a close proximity of the electrostatic chucks.

Claim 5 (Original): The processing apparatus of claim 2, wherein the monatomic nitrogen atom supply unit supplies the dissociated monatomic nitrogen atoms into the transfer chamber.

Claim 6 (Original): The processing apparatus of claim 2, further comprising a controller for controlling a supply timing of the dissociated monatomic nitrogen atoms from the monatomic nitrogen atom supply unit.

Claim 7 (Original): The processing apparatus of claim 2, wherein the monatomic nitrogen atom supply unit includes a pipe communicating with the processing chambers, an N₂ gas supply source for supplying an N₂ gas through the pipe, and an energy supply unit for applying energy to the N₂ gas in the pipe or in the processing chambers to convert the N₂ gas into the dissociated monatomic nitrogen atoms.

Claim 8 (Original): The processing apparatus of claim 6, wherein the energy supply unit has an ultraviolet irradiation unit for irradiating ultraviolet ray to the N₂ gas.

Claim 9 (Original): The processing apparatus of claim 6, wherein the pipe has a dielectric portion, and the energy supply unit has an induction coil wound around the dielectric portion and a high frequency power supply for applying a high frequency to the induction coil.

Claim 10 (Original): The processing apparatus of claims 6, wherein the energy supply unit applies energy which is higher than the dissociation energy of the N₂ gas and lower than the ionization energy of the N₂ gas, to the N₂ gas.

Claim 11 (Currently Amended): A processing method employing a processing apparatus, which includes a transfer chamber, a plurality of processing chambers coupled to the transfer chamber, to process therein a target substrate, and a number of electrostatic chucks provided in the processing chambers to electrostatically adsorb the target substrate thereto, comprising the steps of:

transferring the target substrate from the transfer chamber into one of the processing chambers by using a transfer mechanism;

placing the target substrate on an electrostatic chuck displaced in said one processing chamber;

applying a direct current to an electrode embedded in the electrostatic chuck to electrostatically ~~absorb~~ adsorb the target substrate to the electrostatic chuck;

processing the target substrate in said one processing chamber, to thereby obtain a processed substrate;

terminating the application of the direct current to the electrostatic chuck;

supplying dissociated monatomic nitrogen atoms into said one processing chamber to remove charge on the electrostatic chuck; and

transferring the processed substrate into the transfer chamber using the transfer mechanism.

Claim 12 (Original): The processing method of claim 11, wherein the dissociated monatomic nitrogen atoms are supplied near the electrostatic chucks.

Claim 13 (Original): A processing method using a processing apparatus, which includes a transfer chamber, a first processing chamber coupled to the transfer chamber, for performing a first process on a target substrate therein, a second processing chamber coupled to the transfer chamber for performing a second process on the target substrate therein, and a first and second electrostatic chucks provided in the first and second processing chambers, respectively, to electrostatically adsorb the substrate thereto, comprising the steps of:

transferring the target substrate from the transfer chamber into the first processing chamber using a transfer mechanism;

placing the target substrate on the first electrostatic chuck in the first processing chamber;

applying a direct current to an electrode of the first electrostatic chuck to electrostatically adsorb the target substrate to the first electrostatic chuck;

performing a first process on the target substrate in the first processing chamber to thereby obtain a processed substrate;

terminating the application of the direct current to the first electrostatic chuck;

supplying dissociated monatomic nitrogen atoms into the first processing chamber to remove charge on the first electrostatic chuck;

transferring the processed substrate into the transfer chamber using the transfer mechanism;

transferring the processed substrate from the transfer chamber into the second processing chamber;

placing the processed substrate on the second electrostatic chuck in the second processing chamber;

applying the direct current to an electrode of the second electrostatic chuck to electrostatically adsorb the processed substrate to the second electrostatic chuck; and

performing a second process on the processed substrate in the second processing chamber.

Claim 14 (Original): The processing method of claim 13, wherein the dissociated monatomic nitrogen atoms are supplied near the electrostatic chucks.

Claim 15 (Original): The processing method of claim 13, further comprising the step of supplying the dissociated monatomic nitrogen atoms into the transfer chamber.

Claim 16 (Original): The processing method of claim 13, wherein the dissociated monatomic nitrogen atoms are produced by irradiating ultraviolet ray onto N₂ gas.

Claim 17 (Original): The processing method of claim 13, wherein the dissociated monatomic nitrogen atoms are produced by applying energy, generated during application of a high frequency power to an induction coil, onto N₂ gas.

Claim 18 (Currently Amended): The processing method of claim 13, wherein the dissociated monatomic nitrogen atoms are produced by applying energy, higher than dissociation energy of N_2 and lower than ionization energy of N_2 , to the N_2 gas. ~~12. The processing method of claim 10, wherein the dissociated monatomic nitrogen atoms are supplied near the electrostatic chucks.~~

Claim 19 (Original): A processing apparatus, comprising:
a processing chamber for processing therein a substrate to be processed;
an electrostatic chuck installed in the processing chamber, for adsorbing the substrate to be process thereto; and
a monatomic N atom supply unit for supplying dissociated monoatomic N atoms into the processing chamber.

Claim 20 (Currently Amended): A processing method employing a processing apparatus, which includes a processing chamber for processing a substrate to be processed and an electrostatic chuck for adsorbing the substrate to be ~~process~~ processed thereto, comprising the steps of:

mounting the substrate to be processed on the electrostatic chuck disposed in the processing chamber; and
supplying dissociated monatomic N atoms into the processing chamber.